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ABSTRACT

The relation between teaching activities and evaluation is often hampered by test results returned which are too late to be of use, are difficult to interpret, or poorly correlated with curricular objectives. A synergistic relation, on the other hand, can produce greater student learning than either teacher or evaluation can produce alone. Evaluation is more useful to teachers if it is focused on teacher concerns about current curriculum, about students, and about class achievement. Comprehensive Achievement Monitoring (CAM) accomplishes the goal of such a synergistic relation by leading the teacher to decisions which define the curriculum and set priorities for information collection. Repeated estimates of students' achievement before instruction, immediately post-instruction, and retention on all major behavioral objectives for a course are provided. Hence enough quick and useful information is available to be used in curriculum revision. Five applications based on such evaluative reporting are noted. (ES)

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A Synergistic Relation

Between Teachers and Evaluation[1,2]

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Is there any relation between the activities of teachers and the types of evaluation which occurs in their schools? This question cannot be answered simply. Any answer must be highly qualified. Sure schools spend one or more dollars per pupil to support a standardized testing program. Often the purpose of the program is stated as the gathering of information for more valid scheduling of students into courses or for occupational guidance. Yet how often are the tests administered, with their full drama of an entire school day devoted to detailed instructions and carefully timed subtests, and the results are returned by the manufacturer months after the students are actually scheduled into their courses. The test manufacturers have certainly not kept pace with the needs of the modern school and probably do not serve those of the more traditionally-oriented school any better. Teachers have no use for the results of the standardized tests even, if they were entirely clear about the meaning of the jargon of subtest and percentile. None of these words are related to the curriculum and the topics which the teachers are discussing in class. A low class average in the science subtest may mean any one of several dozen things to the teacher of general science, health science, earth science, biology, chemistry, and physics who have taught or will teach the students. Maybe their reaction will be to say, "The mathematics teachers did such a poor job of preparing the students in algebra that they had no chance of learning any science."

The relation between the teacher and evaluation should not be the kind alluded to, but should be synergistic, as the business corporations like to say, by supporting one another in ways which will produce results in student learning greater than either working separately. What

interaction would produce the largest pay-off? Evaluation could become more highly used by teachers if it focused on the concerns which they have. Teachers would have information which would be useful in several dimensions. They would ultimately have information of better quality about their curriculum, about their students, and about their class's achievement for the current year. Based upon this information teachers would be in a position to better accomplish their goals within the course.

Comprehensive Achievement Monitoring (CAM) accomplishes the goal of a synergistic relation between teachers and evaluation. The CAM model includes longitudinal testing using item sampling techniques to gather information about curriculum, students, and classroom management. Computer data processing allows the rapid and sophisticated analysis of the testing and the printing of reports that the teacher and his students can use in their ongoing decision-making in the course.

CAM as an evaluation methodology is successful because it is sensitive to the curriculum and the information needs of the teacher. The teacher is asked to specify the content of his course by either writing behavioral objectives or selecting them from a bank of objectives which has been collected and developed by CAM. The structure of the curriculum is further defined by the sequence of the objectives and the time allocated to their teaching. The curriculum becomes a tangible entity which can be discussed in specific terms rather than the general terms of science or social studies which must be used with the traditional standardized tests. After defining the curriculum CAM involves the teacher, through workshop experiences and discussions, in setting priorities for the collection of information. The teacher is asked to decide how

often he wants to find out about the progress of his students, e.g., bi- or tri-weekly, how detailed the information about each objective should be at each testing time (where the detail may change at each time), what the value of the information will be to him at each time, and with what precision it should be reported. By carefully leading the teacher to these decisions and outlining the restrictions placed upon the evaluation by the natural limitations of time and money, the evaluation is in a position to provide the optimum kind of information at the right time.

How does the teacher benefit from the relation between himself and the evaluation which CAM offers? Rather than teaching and making decisions by the "seat of his pants", the teacher has several forms of information which are particularly useful. The CAM system provides repeated estimates of pre-instruction, immediate post-instruction, and retention achievement of students on all major behavioral objectives for a course. This information is reported to the teacher and the student usually at two or three week intervals quickly enough to influence the management of instruction and in detail enough to be useful for curriculum revision.

Consider the following examples of the use of information from CAM by various teachers.

1. A teacher of eleventh grade algebra used CAM to evaluate his course, and found that most objectives which he had planned to teach during the first semester were remembered by his students from previous courses. He changed his schedule of objectives to cover the semester's work in six weeks and continued to monitor students achievement to make sure that they had learned them.

2. In another school introductory biology and health science had been taught for many years at the tenth grade level and frequently enrolled the same students concurrently. CAM showed that at the beginning of the year the students could not handle the biology objectives related to the human body. It further demonstrated to the biology teacher that during the latter part of the first semester his students were learning many of his objectives on the human body, although he had not taught them yet. The health course teacher was found to be teaching them. Both teachers were now in a position to better plan a program for their mutual students.

3. In a course designed to be individually paced by allowing the students to learn algebra from a set of learning activity packages (LAP), the team of teachers using CAM was able to identify the LAPs which were redundant. They let students skip the redundant material.

4. A history teacher schedules a conference with each student between each test administration to discuss the results of the CAM monitoring and suggest areas to review and study.

5. A ninth grade course in algebra included a week's work in finding square roots which the students seemed to learn well at the time. When the teacher found out from the repeated measurement of retention that the students did not remember these skills until the end of the course without repeated review, the teacher chose to drop the topic from the curriculum rather than take the extra time to keep the ideas fresh in the student's mind.